# Diesel Generator Set

## MTU 10V1600 DS550

500 kVA/50 Hz/Prime (Fuel-Optimized)/380 - 415V  
Reference MTU 10V1600 DS550 (550 kVA Fuel-Optimized)  
for Standby Rating Technical Data

### System ratings **

<table>
<thead>
<tr>
<th>Voltage (L-L)</th>
<th>380V</th>
<th>400V</th>
<th>415V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PF</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Hz</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>kW</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>kVA</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Amps</td>
<td>760</td>
<td>722</td>
<td>696</td>
</tr>
<tr>
<td>skVA@30% voltage dip</td>
<td>980</td>
<td>1,100</td>
<td>1,200</td>
</tr>
<tr>
<td>Generator model</td>
<td>572RSL4029</td>
<td>572RSL4029</td>
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</tr>
<tr>
<td>Temp rise</td>
<td>125 °C/40 °C</td>
<td>125 °C/40 °C</td>
<td>125 °C/40 °C</td>
</tr>
<tr>
<td>Connection</td>
<td>4 LEAD WYE</td>
<td>4 LEAD WYE</td>
<td>4 LEAD WYE</td>
</tr>
</tbody>
</table>

** Prime technical data is for a fuel-optimized prime unit.

### Certifications and standards

- Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Seismic certification – optional
  - IBC certification
- OSHPD pre-approval
- Performance Assurance Certification (PAC)
  - Generator set tested to ISO 8528-5 for transient response
  - Verified product design, quality and performance integrity
  - All engine systems are prototype and factory tested
- Power rating
  - Accepts rated load in one step per NFPA 110
  - Permissible average power output during 24 hours of operation is approved up to 75%.
Standard features *
- MTU is a single source supplier
- Global product support
- 2 year standard warranty
- 10V1600 diesel engine
  - 17.5 Liter displacement
  - Common rail fuel injection
  - 4-cycle
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
  - Integral set-mounted
  - Engine-driven fan

Generator
- Brushless, rotating field generator
- 2/3 pitch windings
- PMG (Permanent Magnet Generator) supply to regulator
- 300% short circuit capability
- Digital control panel(s)
  - UL recognized, CSA certified, NFPA 110
  - Complete system metering
  - LCD display

Standard equipment *

Engine
- Air cleaners
- Oil pump
- Oil drain extension and S/O valve
- Full flow oil filter
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 24V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery box and cables
- Flexible fuel connectors
- Flexible exhaust connection

Digital control panel(s)
- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- CANBus ECU communications
- Windows®-based software
- Multilingual capability
- Remote communications to RDP-110 remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

Generator
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- No load to full load regulation
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 125 °C maximum prime temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- ±0.25% voltage regulation
- 100% of rated load - one step
- 5% maximum total harmonic distortion
### Application data

**Engine**
- **Manufacturer**: MTU
- **Model**: 10V1600G20F
- **Type**: 4-cycle
- **Arrangement**: 10-V
- **Displacement**: L (cu in) 17.5 (1,068)
- **Bore**: cm (in) 12.2 (4.8)
- **Stroke**: cm (in) 15 (5.91)
- **Compression ratio**: 17.5:1
- **Rated rpm**: 1,500
- **Engine governor**: electronic isochronous (ADEC)
- **Maximum power**: kW (bhp) ** 448 (601)
- **Speed regulation**: ± 0.25%

**Liquid capacity (Lubrication)**
- **Total oil system**: L (gal) 61 (16)
- **Engine jacket water capacity**: L (gal) 60 (15.9)
- **System coolant capacity**: L (gal) 99.3 (26.2)

**Electrical**
- **Electric volts DC**: 24
- **Cold cranking amps under -17.8 °C (0 °F)**: 1,050

**Fuel system**
- **Fuel supply connection size**: -10 JIC 37° female
- **Fuel return connection size**: -6 JIC 37° female
- **Maximum fuel lift**: m (ft) 5 (16)
- **Recommended fuel**: diesel #2
- **Total fuel flow**: L/hr (gal/hr) 340.7 (90)

**Fuel consumption**
- **At 100% of power rating**: L/hr (gal/hr) 100 (26.4)
- **At 75% of power rating**: L/hr (gal/hr) 78 (20.6)
- **At 50% of power rating**: L/hr (gal/hr) 57 (15.1)

**Cooling - radiator system**
- **Ambient capacity of radiator**: °C (°F) 50 (122)
- **Maximum restriction of cooling air**: intake and discharge side of radiator: kPa (in. H₂O) 0.2 (0.8)
- **Water pump capacity**: L/min (gpm) 390 (103)
- **Heat rejection to coolant**: kW (BTUM) 216 (12,283)
- **Heat rejection to after cooler**: kW (BTUM) 60 (3,412)
- **Heat radiated to ambient**: kW (BTUM) 46.5 (2,644)
- **Fan power**: kW (hp) 16.4 (22)

**Air requirements**
- **Aspirating**: m³/min (SCFM) 27 (953)
- **Remote cooled applications**: m³/min (SCFM) 554 (19,564)
- **Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise**: m³/min (SCFM) 169 (5,964)

**Exhaust system**
- **Gas temp. (stack)**: °C (°F) 520 (968)
- **Gas volume at stack temp**: m³/min (CFM) 75 (2,649)
- **Maximum allowable back pressure at outlet of engine, before piping**: kPa (in. H₂O) 8.5 (34.1)

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Weights and dimensions

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (dry/less tank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>3,416 x 1,873 x 2,032 mm (134.5 x 73.8 x 80 in)</td>
<td>4,175-5,129 kg (9,205-11,308 lb)</td>
</tr>
</tbody>
</table>

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

Sound data

<table>
<thead>
<tr>
<th>Unit type</th>
<th>Prime full load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0:</td>
<td>88.3 dB(A)</td>
</tr>
</tbody>
</table>

Open power unit: dB(A)

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

Emissions data

<table>
<thead>
<tr>
<th>NO₂ + NMHC</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/F</td>
<td>C/F</td>
<td>C/F</td>
</tr>
</tbody>
</table>

C/F = Consult Factory/MTU Distributor
N/A = Not Available

Rating definitions and conditions

- Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, and AS 2789. Average load factor: ≤ 75%.
- Consult your local MTU Distributor for derating information.